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Aerobic - A process of producing energy that requires oxygen.

Aerobic Capacity - The total or maximal amount of aerobic work that can be done by an individual.

Aerobic Metabolism - Most of the energy needed to support exercise that goes beyond 3 minutes is provided by aerobic or oxidative energy metabolism. In other words oxygen is required to produce energy.

Agility - The ability of an individual to change physical position with speed and accuracy.

Anaerobic Capacity - The total or maximal amount of anaerobic work that can be done by an individual.

Anaerobic Metabolism - A type of energy metabolism that does not require oxygen.

Anaerobic Threshold - Transition point when aerobic metabolism can no longer meet the energetic demands and energy from sources independent of oxygen are required. This is also the work rate at which blood lactate concentrations start to increase during graded exercise.

Anaerobic - A process of producing energy that does not require the presence of oxygen.

Adenosine Triphosphate (ATP) - Energy released from food is stored in the muscle in the form of ATP. When ATP is broken down energy is released.

Anaerobic Glycolysis - A process of breaking down glycogen stores without oxygen. Lactate (lactic acid) is the by-product of this process.

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Balance - The ability of an individual to maintain equilibrium when stationary or while moving.

Cardiovascular Fitness - Ability of the heart, lung and blood vessels to transport oxygen and to remove waste products from the exercising muscle.

Concentric Contraction - Shortening of the muscle as it develops tension. This type of exercise is sometimes known as “positive exercise”.

Coordination - Ability to use the senses, such as sight, along with the functioning of a set of muscle groups to complete an activity accurately. For example: hand-eye coordination during rifle shooting.

Dynamic Exercise - Alternate contraction and relaxation of a skeletal muscle or muscles causing partial or complete range of movement through a joint.

Eccentric Contraction - Involves the lengthening of a muscle as it develops tension and is also known as “negative exercise”. Eccentric contractions are used when resisting gravity as is the case in walking down hill or down stairs.

Electro Cardiogram (ECG) - A medical device that can show the electrical activity of the heart.

Ergometer - An instrument used to measure work and power. Ergometry is a measurement of work and power during exercise.

Exercise - Planned, structured, and repetitive movements performed to improve or maintain components of physical fitness. The components include cardio vascular fitness, muscle strength and endurance, flexibility and body composition.

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Flexibility - Controlled range of motion of a specific joint. The range is a function of elasticity of the tendons, ligaments, and surrounding soft tissue. Control is a function of strength at each degree of motion, especially at the end ranges.

Glycogen - A form of carbohydrates that is stored in the liver and in muscles for energy.

Glycolysis - Breaking down of simple sugars into simpler compounds (chiefly pyruvate and lactate) for energy.

This process is anaerobic.

Glycolytic - Pertaining to or promoting glycolysis.

Heart Rate - The total number of heart beats per minute.

Interval Training - Very intense exercise bouts are alternated with rest or periods of low intensity exercise. Exercise during intervals is typically anaerobic.

Isokinetic - Occurs following the contraction of a muscle or muscle group which results in joint movement at a constant angular velocity. For example, the arm stroke during freestyle swimming.

Isometric (Static) - Occurs when the muscle contracts without shortening or lengthening; tension is developed but no muscular work is performed; energy is lost as heat. There is no joint movement during this type of exercise.

Isotonic (Dynamic) - Isotonic movement occurs when the muscle contracts and maintains constant tension by lengthening or shortening.

Lactic Acid (lactate) - A byproduct of anaerobic metabolism. Lactic acid causes muscular pain and is broken down by the liver.

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Maximal Oxygen Uptake - A measure of aerobic fitness: the maximal rate of oxygen uptake, and therefore aerobic energy utilization during exercise. Typically expressed as liters per minute or milliliters per kilogram (kg) body weight per minute (ml/ min/kg).

Metabolic Equivalent Unit (MET) - A unit used to estimate the metabolic cost of physical activity. One MET is the energy used by an individual at rest. This is equivalent to 3.5 ml of oxygen consumed per kg body weight per minute.

Myoglobin - An iron containing muscle protein that is responsible for the reddish color of various muscle fiber types.

Metabolism - All physical and chemical processes that maintain life.

Minute Ventilation - The volume of air breathed per minute by an individual at rest or during physical activity.

Muscular Endurance - Ability of a muscle or muscle group to contract at a submaximal force, usually against 50 to 60% of maximal resistance, over a period of time. Measured as the number of repetitions completed.

Muscular Strength - The maximal force or tension that can be generated by a muscle or muscle group.

Physical Activity - Any form of movement by skeletal muscles that results in energy expenditure.

Physical Fitness - The ability of an individual to perform physical activity.

Plyometrics - Also known as explosive jump training. Muscles are rapidly stretched prior to

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Rate of Exertion - Measured using the Borg Category RPE Scale. As exercise intensity increases, the RPE increases and in general it is closely associated with physiological measures such as heart rate and oxygen consumption.

Reaction Time - The time taken by an individual between receiving a signal and reacting to it.

Respiratory Exchange Ratio - The ratio of carbon dioxide produced to oxygen consumed. An indication of the primary energy source used during exercise.

Speed - The ability of an individual to perform a movement in a short period of time.

Strength - The ability of a muscle to contract against resistance and provide control throughout the full range of motion.

Stroke Volume - The volume of blood pumped from the heart with each beat.

Tendon - A fibrous cord in which the fibers of a muscle end and by which the muscle is attached to a bone or other structure.

Tidal Volume - The volume of air moved during one breathing cycle while inhaling or exhaling.